

**Detroit, MI #64****SI**

TABLE 301.1 EXTERIOR DESIGN CONDITIONS

|   |             |
|---|-------------|
| WINTER Design Dry Bulb: minus 16°C                            | HDD18: 3331 |
| SUMMER Design Dry Bulb: 31°C; Mean Coincident Wet Bulb: 22°C  | CDD18: 512  |
| Annual Operating Hours, 8AM - 4PM when 12.8°C <= T <= 20.6°C: | 632         |

TABLE 402.3.1(A) MAX. THERMAL TRANSMITTANCE (U)

|                                      |       |
|--------------------------------------|-------|
| Roof                                 | 0.312 |
| Wall adjacent to unconditioned space | 0.778 |
| Floor over unconditioned space       | 0.295 |

TABLE 402.3.1(B) MAX. EXEMPT SKYLIGHT AREA AS % OF ROOF AREA

| Visible Light Transmittance (VLT) | Light level Lux | Range of Lighting Power Densities |           |           |       |
|-----------------------------------|-----------------|-----------------------------------|-----------|-----------|-------|
|                                   |                 | <10.8                             | 10.8-16.2 | 16.3-21.5 | >21.5 |
| 0.75                              | 320             | 2.3                               | 3.4       | 4.5       | 5.6   |
|                                   | 540             | 2.5                               | 4.0       | 5.5       | 7.0   |
|                                   | 750             | 2.8                               | 4.6       | 6.4       | 8.2   |
| 0.50                              | 320             | 3.6                               | 5.1       | 6.6       | 8.1   |
|                                   | 540             | 3.9                               | 6.0       | 8.1       | 10.2  |
|                                   | 750             | 4.2                               | 6.9       | 9.6       | 12.3  |

TABLE 402.3.2 MINIMUM THERMAL RESISTANCE (R-VALUE)

|                                   |         |         |         |
|-----------------------------------|---------|---------|---------|
| Slab on grade: Unheated / Heated: | 600 mm  | 900 mm  | 1200 mm |
| Horizontal                        | R-3/R-5 | R-2/R-4 | R-2/R-4 |
| Vertical                          | R-1/R-3 | R-1/R-3 | R-1/R-3 |
| Wall below grade:                 | R-2     |         |         |

TABLE 402.4.1.1 MAX. WALL THERMAL TRANSMITTANCE (Uow)

| ILD Range    | WWR      | HC Range | Insulation Position |          |
|--------------|----------|----------|---------------------|----------|
|              |          |          | Interior/Integral   | Exterior |
| All          | 0 to 100 | 0.0 - 28 | 0.494               | 0.494    |
| 0.0 to 16.1  | 23       | 29 - 56  | 0.522               | 0.642    |
|              |          | 57 - 85  | 0.574               | 0.727    |
|              |          | 85 +     | 0.613               | 0.755    |
|              | 64       | 29 - 56  | 0.517               | 0.608    |
|              |          | 57 - 85  | 0.551               | 0.670    |
|              |          | 85 +     | 0.579               | 0.687    |
| 16.2 to 32.3 | 20       | 29 - 56  | 0.534               | 0.687    |
|              |          | 57 - 85  | 0.591               | 0.801    |
|              |          | 85 +     | 0.647               | 0.840    |
|              | 67       | 29 - 56  | 0.522               | 0.625    |
|              |          | 57 - 85  | 0.562               | 0.698    |
|              |          | 85 +     | 0.591               | 0.721    |
| 32.4 to 37.7 | 18       | 29 - 56  | 0.534               | 0.698    |
|              |          | 57 - 85  | 0.602               | 0.823    |
|              |          | 85 +     | 0.659               | 0.869    |
|              | 66       | 29 - 56  | 0.522               | 0.625    |
|              |          | 57 - 85  | 0.562               | 0.704    |
|              |          | 85 +     | 0.596               | 0.727    |

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TABLE 402.4.1.2 MAXIMUM WINDOW WALL RATIO (WWR)

| Internal Load Density (ILD) Range | Projection Factor (PF) Range | Solar Heat Gain Coefficient (SHGC) Range | Fenestration U-Factor (Uof) |         |                       |
|-----------------------------------|------------------------------|--|-----------------------------|---------|-----------------------|
|                                   |                              |  | Base Case                   |         | Perimeter Daylighting |
|                                   |                              |  | to 2.96                     | to 2.22 | to 0.00               |
| 0.0 - 16.1                        | 0.00 - 0.25                  | 0.87 - 0.63                              | 23                          | 24      | 26                    |
|                                   |                              | 0.62 - 0.53                              | 26                          | 28      | 31                    |
|                                   |                              | 0.52 - 0.44                              | 29                          | 31      | 35                    |
|                                   |                              | 0.43 - 0.34                              | 32                          | 35      | 40                    |
|                                   |                              | 0.33 - 0.23                              | 37                          | 40      | 48                    |
|                                   | 0.26 - 0.50                  | 0.22 - 0.00                              | 43                          | 47      | 60                    |
|                                   |                              | 0.87 - 0.63                              | 30                          | 32      | 36                    |
|                                   |                              | 0.62 - 0.53                              | 34                          | 36      | 42                    |
|                                   |                              | 0.52 - 0.44                              | 37                          | 40      | 47                    |
|                                   |                              | 0.43 - 0.34                              | 39                          | 43      | 53                    |
| 16.2 - 32.3                       | 0.50 +                       | 0.33 - 0.00                              | 43                          | 48      | 61                    |
|                                   |                              | 0.87 - 0.63                              | 36                          | 39      | 45                    |
|                                   |                              | 0.62 - 0.53                              | 39                          | 43      | 51                    |
|                                   |                              | 0.52 - 0.44                              | 42                          | 46      | 57                    |
|                                   |                              | 0.43 - 0.00                              | 44                          | 49      | 62                    |
|                                   | 0.00 - 0.25                  | 0.87 - 0.63                              | 20                          | 21      | 22                    |
|                                   |                              | 0.62 - 0.53                              | 23                          | 24      | 26                    |
|                                   |                              | 0.52 - 0.44                              | 26                          | 28      | 30                    |
|                                   |                              | 0.43 - 0.34                              | 30                          | 31      | 35                    |
|                                   |                              | 0.33 - 0.23                              | 35                          | 37      | 43                    |
| 32.4 - 37.7                       | 0.26 - 0.50                  | 0.22 - 0.00                              | 42                          | 46      | 56                    |
|                                   |                              | 0.87 - 0.63                              | 27                          | 28      | 30                    |
|                                   |                              | 0.62 - 0.53                              | 30                          | 32      | 36                    |
|                                   |                              | 0.52 - 0.44                              | 34                          | 36      | 41                    |
|                                   |                              | 0.43 - 0.34                              | 37                          | 40      | 46                    |
|                                   | 0.50 +                       | 0.33 - 0.00                              | 42                          | 46      | 55                    |
|                                   |                              | 0.87 - 0.63                              | 32                          | 34      | 38                    |
|                                   |                              | 0.62 - 0.53                              | 36                          | 39      | 45                    |
|                                   |                              | 0.52 - 0.44                              | 39                          | 43      | 50                    |
|                                   |                              | 0.43 - 0.00                              | 42                          | 46      | 56                    |
|                                   | 0.00 - 0.25                  | 0.87 - 0.63                              | 18                          | 18      | 19                    |
|                                   |                              | 0.62 - 0.53                              | 21                          | 22      | 23                    |
|                                   |                              | 0.52 - 0.44                              | 24                          | 25      | 27                    |
|                                   |                              | 0.43 - 0.34                              | 27                          | 28      | 31                    |
|                                   |                              | 0.33 - 0.23                              | 32                          | 34      | 39                    |
|                                   | 0.26 - 0.50                  | 0.22 - 0.00                              | 39                          | 43      | 51                    |
|                                   |                              | 0.87 - 0.63                              | 24                          | 25      | 27                    |
|                                   |                              | 0.62 - 0.53                              | 28                          | 29      | 32                    |
|                                   |                              | 0.52 - 0.44                              | 31                          | 32      | 36                    |
|                                   |                              | 0.43 - 0.34                              | 34                          | 36      | 42                    |
|                                   | 0.50 +                       | 0.33 - 0.00                              | 39                          | 42      | 50                    |
|                                   |                              | 0.87 - 0.63                              | 29                          | 31      | 34                    |
|                                   |                              | 0.62 - 0.53                              | 33                          | 35      | 40                    |
|                                   |                              | 0.52 - 0.44                              | 36                          | 39      | 45                    |
|                                   |                              | 0.43 - 0.00                              | 39                          | 43      | 51                    |